

La., Tex., Ill., N. J.; 9th, N. C., Ga., Fla., Mich., Tex., N. Mex., Ohio; 10th, Mass., N. C., N. J., Conn., Dak., N. Y., Ohio; 11th, Ind., Ty., Wis., Iowa, Minn., Ill.; 12th, Pa., W., Va., Iowa, Dak., Wy., Minn., Conn., Ill., Mich., N. Y., Ohio, Va., Wis.; 13th, S. C., Tenn., N. C., Ga., Mich., Iowa, Tex., Conn., Ill., Me.; 14th, Va., Ala., N. Y., N. C., Ga., Ill., Mass., Tenn.; 15th, S. C., Pa., N. Y., N. J., Ga., Conn., Dak., Mich., Tex., Ohio, Va.; 16th, S. C., Pa., N. Y., Ga., Ind., Ty., Iowa, Minn., Conn., Ill., Ohio; 17th, Iowa, Miss., Tex., Ga., Ill., N. Y., Wis.; 19th, Ohio, Dak., Mass.; 20th, Minn.; 21st, La., Neb.; 22nd, Ala.; 23rd, W. Va., Va.; 24th, Va., Ga., Dak.; 25th, Dak., Minn., Conn., N. Y.; 26th, Mo., Minn., Mass., Mich.; 27th, Iowa, Ind., Ill., Ohio; 28th, Mich., Mass., Kan., N. Y., Va.; 29th, Pa., N. Y., Me., Ga., Ohio, Kan., Conn., Ill., Va.; 30th, Va., Ga., Iowa, Ala., N. C., Ill., Wis.; 31st, S. C., Iowa, N. C., Ga., Ohio, Fla., Dak., Ill., Ind., N. J., Va., Wis.

Auroras were observed as follows: Vevay, Ind., 2nd and 5th; West Charlotte, Vt., 7th; Duluth, Minn., 8th, 16th and 17th; Northport, Mich., 9th; Manticello, Iowa, 10th; Cambridge, Mass., and Cleveland, Ohio, 16th; Swauzey, N. H., 17th; Bangor, Me., 18th and 30th.

Ground Currents.—Disturbances on lines of telegraph have been reported as follows: At Pike's Peak, Col., 6th; Fort Sill, Ind., Ty., 7th; Laredo, Texas, 8th, 9th and 10th; Bismarck, Dak., 24th, (line not working,) and 27th.

OPTICAL PHENOMENA.

Solar Halos.—1st, Mich.; 2nd, Me., Ohio, R. I., Conn.; 3rd, Fla.; 4th, Fla.; 6th, Ohio, Ky.; 7th, N. Y.; 8th, Ill.; 9th, La.; 10th, Iowa; 11th, Dak., Ill., Ohio, Ky., Fla., N. C., Mich.; 12th, Miss., Va.; 13th, Ga.; 14th, S. C.; 15th, N. C.; 17th, Miss., N. Y., Conn., Cal.; 18th, Me., N. C.; 20th, Conn., Mass., N. J., N. Y., S. C., R. I., Ga., N. C.; 21st, Ill., Iowa, N. Y., Vt., S. C., N. C., Conn.; 22nd, Ill., Ohio, S. C., Ky., N. C.; 23rd, Wis., S. C.; 24th, Ga.; 25th, R. I., N. C.; 26th, Fla., Ga., N. C., Conn.; 27th, Ill., Miss., Fla., Mich., N. C.; 28th, N. C., S. C., La.; 29th, N. C.; 30th, Mich.; 31st, Conn., Me., N. Y., R. I., Ga.

Lunar Halos.—1st, Conn.; 14th, Ind.; 15th, Mo.; 16th, Texas, Mo.; 17th, Mass., N. H., Ind., Ohio, Ala., Cal.; 18th, Va., S. C., N. H., N. J., Ga., Ohio, N. C.; 19th, N. J., N. C., Tenn., Va., N. Y., Ohio, Mich.; 20th, Iowa, Vt., S. C., N. H., N. C., Neb., Fla., Mo., Ala., Mich.; 21st, Ind., Iowa, Me., Mich., N. J., N. Y., Ohio, Vt., N. H., Neb., Fla.; 22nd, Mass., Mich., Ohio, Vt., W., Va., N. C., Penn., Fla., Conn., Wis., Minn.; 23rd, Mass., Me., Ind., N. Y., Iowa, Conn., Mo., Penn., Ala., Minn.; 24th, Mass., Vt., S. C., W., Va., Iowa, Kan., Ga.; 25th, Ill., Mass., N. Y., S. C., N. C., Ind., Fla.; 26th, Fla., Mich., W., Va., N. C., Mo., D. C.; 27th, Mo., Ala., Ga.; 28th, Ga., S. C., N. C., Minn.; 29th, Wis.; 30th, R. I.; Mo.; 31st, N. Y.

Mirage.—2nd, Olivet, Dak.; 3rd, Duluth, Minn.; 4th and 15th, Tybee Island, Ga.; 13th, Indianapolis, Tex.; 25th, Rochester, N. Y.

MISCELLANEOUS PHENOMENA.

BIRDS.—*Martins*, had left Morgantown, W. Va., 11th, were leaving Bellefontaine, Ohio, on the 1st, and Jacksonburg, Ohio, on the 13th. *Swallows*, had left Morgantown, W. Va., 17th; were seen flying southward in great numbers, at Daytona, Fla., 14th and 21st; congregating in large numbers at Baxter Springs, Kan., 2nd; left Jacksonsburg, Ohio, 23rd; Bellefontaine, Ohio, leaving 22nd. *Babolinkas*, was last seen at Vermillion, N. Y., 1st. *Wild Geese*, Sacramento, Cal., (first of season), passed from N., 30th. *Wild Ducks*, were seen at Lower Brule Agency, Dak., flying S., 26th. *Hawks*, were seen flying S., at Wappinger's Falls, N. Y., 26th.

INSECTS.—*Grasshoppers*, Minnesota, sixteen counties have sustained an appreciable loss from grasshoppers this year; in Kandiyohi and Chippewa, the destruction was complete, and in the remaining thirteen the ravages are estimated at $\frac{1}{2}$ to $\frac{1}{4}$ of a full crop. In a strip fifty miles in width by one hundred and twenty-five in length, extending from Otter Tail Lake to the Minnesota river, fully one fourth of the farmers raised nothing, and the remainder very little. Idaho, 7th, in Dixie valley, "hoppers" have destroyed oat crop. In Boise valley, ravages thus far only partial and local. They are somewhat worse this year, but there has been nothing approaching to the ravages in the region beyond the Rocky Mountains, Montana, Virginia City, 1st, large swarm flying northeast, first of season; Dakota, Bismarck, 2nd, abundant, 9th, very few; Yankton, 1st, 12th and 15th; Ft. Sisseton, fly SE. 1st and 2nd; Olivet, 1st, large flight of locusts, S. and 8th, SE. Iowa, Des Moines valley, grasshoppers plentiful, but doing no damage. Nebraska, North Platte, Locust flying west in myriads; Emerson, SW. 7th, 8th, 9th, 25th, and NE. 10th; Plattsmouth, SW. 2nd, NW. 3rd and 4th; Clear Creek, S. 1st, W. 2nd, N. 3rd, S. 6th to 9th, N. 10th, SW. 11th, 12th, 14th; Genoa, S. 1st, 2nd, 8th, SE. 7th, S. and W. 8th to 14th, N. 19th. Utah, very little damage, except in Cache valley. Canada Ottawa, Augusta township, 7th, so numerous that farmers were cutting oats in order to save them.

Polar Bands.—Carthagena, Ohio, 1st, 6th, 7th, 11th; Gardiner, Me., 2nd, 20th; Wytheville, Va., 5th, 6th, 9th, 22nd, 23rd, 25th, 26th, 27th; Auburn, N. H., 8th, 13th; Tabor, Ohio, 18th; Portsmouth, N. C., (from SW. to NE.) 20th; Woodstock, Vt., 21st, 23rd; Rowe, Mass., 23rd; Guttenburg, Iowa, 25th; Jacksonburg, Ohio, 25th; Freehold, N. J., 26th, 30th; Charlestown, S. C., 29th.